when the gesture is made with two fingers **111-112**. In the case, where the perimeter is a rectangle, the bounding rectangle extends from the global x_{low}, x_{high}, y_{low}, and y_{high} of the intensity values. The center (C), height (H), and width (W) of the bounding box are also determined. **FIG. 4** shows a circle **401** for a four finger touch.

[**0033**] As shown in **FIGS. 5-9** for an example tabletop publishing application, the gestures are used to arrange and lay-out documents for incorporation into a magazine or a web page. The action performed can include annotating displayed documents, erasing the annotations, selecting, copying, arranging, and piling documents. The documents are stored in a memory of a computer system, and are displayed onto the touch surface by a digital projector. For clarity of this description the documents are not shown. Again, it should be noted that the gestures here are but few examples of many possible gestures.

[**0034**] In **FIG. 5**, the gesture that is used to indicate a desire to annotate a displayed document is touching the document with any two fingers **501**. Then, the gesture is continued by "writing" or "drawing"**502** with the other hand **503** using a finger or stylus. While writing, the other two fingers do not need remain on the document. The annotating stops when the finger or stylus **502** is lifted from the surface. During the writing, the display is updated to make it appear as if ink is flowing out of the end of the finger or stylus.

[**0035**] As shown in **FIG. 6**, portions of annotations can be "erased" by wiping the palm **601** back and forth **602** across on the surface. After, the initial classification of the gesture, any portion of the hand can be used to erase. For example, the palm of the hand can be lifted. A fingertip can be used to erase smaller portions. As visual feedback, a circle **603** is displayed to indicate to the user the extent of the erasing. While erasing, the underlying writing becomes increasingly transparent over time. This change can be on a function an amount of surface contact, speed of hand motion, or pressure. The less surface contact there is, the slower the change in transparency, and the less speed involved with the wiping motion, the longer it takes for material to disappear. The erasing terminates when all contact with the surface is removed.

[**0036**] **FIGS. 7-8** shows a cut-and-paste gesture that allows a user to copy all or part of a document to another document. This gesture is identified by touching a document **800** with three or more fingers **701**. The system responds by displaying a rectangular selection box **801** sized according to the placement of the fingers. The sides of the selection box are aligned with the sides of the document. It should be realized that the hand could obscure part of the display.

[**0037**] Therefore, as shown in **FIG. 8**, the user is allowed to move **802** the hand in any direction **705** away from the document **800** while continuing to touch the table. At the same time, the size of the bounding box can be changed by expanding or shrinking of the spread of the fingers. The selection box **801** always remains within the boundaries of the document and does not extend beyond it. Thus, the selection is bounded by the document itself. This enables the user to move **802** the fingers relative to the selection box.

[**0038**] One can think of the fingers being in a control space that is associated with a virtual window **804** spatially related to the selection box **801**. Although the selection box halts at an edge of the document **202**, the virtual window **804** associated with the control space continues to move along with the fingers and is consequently repositioned. Thus, the user can control the selection box from a location remote from the displayed document. This solves the obstruction problem. Furthermore, the dimensions of the selection box continue to correspond to the positions of the fingers. This mode of operation is maintained even if the user uses only two fingers to manipulate the selection box. Fingers on both hands can also be used to move and size the selection box. Touching the surface with another finger or stylus **704** performs the copy. Lifting all fingers terminates the cut-and-paste.

[**0039**] As shown in **FIG. 9**, two hands **901** are placed apart on the touch surface to indicate a piling gesture. When the hands are initially are placed on the surface, a circle **902** is displayed to indicate the scope of the piling action. If the center of a document lies within the circle, the document is included in the pile. Selected documents are highlighted. Positioning the hands far apart makes the circle larger. Any displayed documents within the circle hands are gathered into a 'pile' as the hands move **903** towers each other. A visual mark, labeled 'pile', can be displayed on the piled documents. After documents have been placed in a pile, the documents in the pile can be 'dragged' and 'dropped' as a unit by moving both hands, or single documents can be selected by one finger. Moving the hands apart **904** spreads a pile of documents out. Again, a circle is displayed to show the extent of the spreading. This operation terminates when the hands are lifted from the touch surface.

[**0040**] Although the invention has been described by way of examples of preferred embodiments, it is to be understood that various other adaptations and modifications may be made within the spirit and scope of the invention. Therefore, it is the object of the appended claims to cover all such variations and modifications as come within the true spirit and scope of the invention.

We claim:

1. A method for recognizing hand gestures, comprising:

measuring an intensity of a signal at a plurality of touch sensitive pads of a touch sensitive surface;

determining a number of regions of contiguous pads touched simultaneously from the intensities of the signals;

determining an area of each region from the intensities; and

selecting a particular gesture according to the number of regions touched and the area of each region.

2. The method of claim 1, in which each pad is an antenna, and the signal intensity measures a capacitive coupling between the antenna and a user performing the touching.

3. The method of claim 1, in which the regions are touched simultaneously by a single user.

4. The method of claim 1, in which the regions are touched simultaneously by multiple users to indicate multiple gestures.

5. The method of claim 1, further comprising:

determining a total signal intensity for each region.